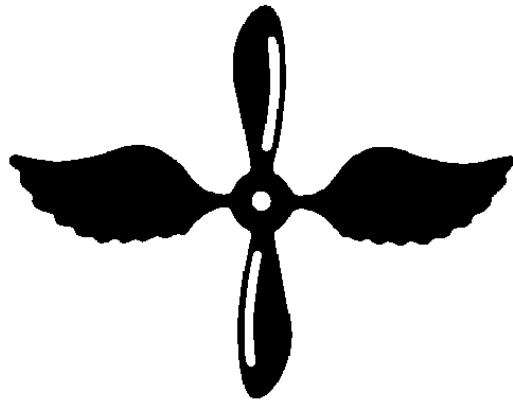


CHAPTER 3



AVIATION MACHINIST'S MATE (AD)

NAVPERS 18068-3E
CH-51

Updated: July 2012

TABLE OF CONTENTS

AVIATION MACHINIST'S MATE (AD)

SCOPE OF RATING	AD-3
GENERAL INFORMATION	AD-4
AVIATION MACHINIST'S MATE ORGANIZATIONAL LEVEL	AD-5
POWER PLANT MAINTENANCE	AD-5
ENGINE COMPONENT INSPECTION AND MAINTENANCE	AD-6
AUXILIARY POWER	AD-6
HELICOPTER MAINTENANCE	AD-6
GENERAL MAINTENANCE	AD-6
CORROSION CONTROL	AD-7
MAINTENANCE ADMINISTRATION	AD-7
FUEL SYSTEMS MAINTENANCE	AD-7
PROPELLER SYSTEMS	AD-7
AVIATION MACHINIST'S MATE INTERMEDIATE LEVEL	AD-9
GENERAL POWER PLANT MAINTENANCE	AD-9
ENGINE COMPONENT INSPECTION AND MAINTENANCE	AD-10
AUXILIARY POWER	AD-10
HELICOPTER MAINTENANCE	AD-10
GENERAL MAINTENANCE	AD-10
CORROSION CONTROL	AD-11
MAINTENANCE ADMINISTRATION	AD-11
FUEL SYSTEMS MAINTENANCE	AD-11
PROPELLER SYSTEMS	AD-11

NAVY ENLISTED OCCUPATIONAL STANDARD

FOR

AVIATION MACHINIST'S MATE (AD)



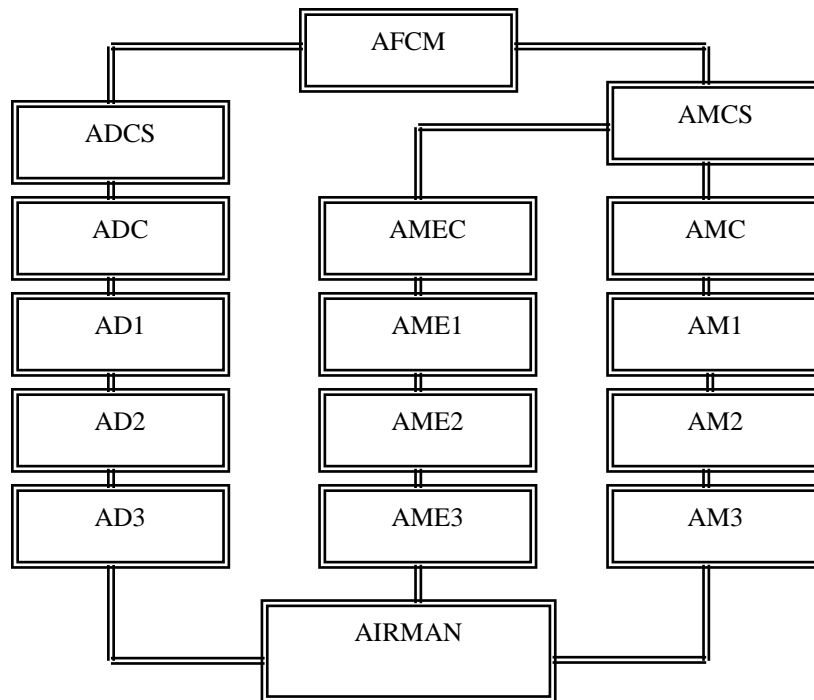
SCOPE OF RATING

Aviation Machinist's Mates (AD) maintain, inspect, troubleshoot, preserve, and de-preserve aircraft engines and their related systems, including fuel, lubrication, compression, combustion, exhaust, accessory gearbox, aircraft mounted accessory drive, propeller, anti-ice, and bleed air systems; conduct special and conditional inspections and oil analysis; functional checks and required adjustments on engines and related systems; and supervise and provide training to powerplant work centers.

This Occupational Standard is to be incorporated in Volume I, Part B, of the Manual of Navy Enlisted Manpower and Personnel Classifications and Occupational Standards (NAVPERS 18068F) as Chapter 3.

GENERAL INFORMATION

CAREER PATTERN



Normal path of advancement to Chief Warrant Officer and Limited Duty Officer categories can be found in OPNAVINST 1420.1.

For rating entry requirements, refer to MILPERSMAN 1306-618.

SAFETY

The observance of Operational Risk Management (ORM) and proper safety precautions in all areas is an integral part of each billet and the responsibility of every Sailor; therefore, it is a universal requirement for all ratings.

NEBC Job Title**Aviation Machinist's Mate Organizational Level****NEBC Job Code****001362****Job Family**

Installation, Maintenance, and Repair

NOC

TBD

Short Title (30 Characters)

AVIA MACHINIST MATE O-LEVEL

Short Title (10 Characters)

AVMECH OLV

Pay Plan

Enlisted

Career Field

AD

Other Relationships and Rules

NEC 64XX, 83XX, and 88XX series

Job Description

Aviation Machinist's Mates Organization Level conduct scheduled and unscheduled maintenance on aircraft engines, fuel, and lubrication systems; perform complete aircraft turboshaft, turbofan, turbojet, and turboprop engine repairs; perform helicopter and propeller maintenance including rotors, gearboxes, and drive accessory repairs; and evaluate jet engines performance using advanced calibration equipment.

DoD Relationship

Group Title
Aircraft Engines

DoD Code
160100

O*NET Relationship

Occupation Title
Aircraft Mechanics and Service Technicians

SOC Code
49-3011.00

Job Family
Installation, Maintenance, and Repair

Skills

Equipment Maintenance

Repairing

Quality Control Analysis

Troubleshooting

Systems Analysis

Coordination

Reading Comprehension

Critical Thinking

Judgment and Decision Making

Management of Material Resources

Abilities

Selective Attention

Manual Dexterity

Deductive Reasoning

Category Flexibility

Written Comprehension

Oral Expression

Perceptual Speed

Information Ordering

Spatial Orientation

Control Precision

POWER PLANT MAINTENANCE

Paygrade	Task Type	Task Statements
E4	CORE	Collect oil samples for analysis
E5	CORE	Conduct special engine inspections
E5	CORE	Inspect accessory gearbox assemblies
E5	CORE	Inspect Gas Turbine Compressor (GTC) assemblies
E4	CORE	Maintain accessory gearbox assemblies
E4	CORE	Maintain engine anti-ice systems
E4	CORE	Maintain engine bleed air systems
E4	CORE	Maintain engine control systems
E4	CORE	Maintain engine ignition systems
E4	CORE	Maintain engine starting systems
E4	CORE	Maintain oil systems (airframe mounted accessory drive, engine, variable exhaust nozzle, gearbox, etc.)
E4	CORE	Maintain Quick Engine Change (QEC) assemblies
E4	CORE	Maintain throttle systems
E5	CORE	Perform electrical inspections on engine components
E5	CORE	Perform engine throttle rigging operations
E4	CORE	Perform engine wash
E4	CORE	Preserve and de-preserve engines
E4	CORE	Remove and replace engines
E4	NON-CORE	Remove and replace Generator Converter Units (GCU)

E6	CORE	Supervise power plant and related systems maintenance
E5	CORE	Troubleshoot power plants and related systems

ENGINE COMPONENT INSPECTION AND MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Inspect internal hot and cold sections
E4	CORE	Maintain compressor systems
E4	CORE	Maintain engine drive shafts
E4	CORE	Maintain engine exhaust systems
E4	CORE	Remove and replace engine anti-ice system components
E4	CORE	Remove and replace engine exhaust system components
E4	CORE	Remove and replace engine ignition system components
E4	CORE	Remove and replace engine oil system components
E4	CORE	Remove and replace engine starting system components
E4	CORE	Repair engine compressor assemblies

AUXILIARY POWER

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Inspect Auxiliary Power Units (APU)
E4	CORE	Maintain Auxiliary Power Unit (APU) systems
E4	CORE	Remove and replace Auxiliary Power Units (APU)
E5	CORE	Troubleshoot Auxiliary Power Units (APU)

HELICOPTER MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Inspect aircraft rotor system components
E4	CORE	Maintain aircraft drive transmission systems
E4	CORE	Maintain aircraft rotor systems
E4	CORE	Maintain engine fire bottles
E5	CORE	Perform vibration analysis
E4	CORE	Remove and replace aircraft rotor system components

GENERAL MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Conduct aircraft maintenance turns
E5	CORE	Conduct aircraft transfer and acceptance inspections
E5	CORE	Conduct conditional inspections
E6	CORE	Conduct Quality Assurance (QA) inspections
E5	CORE	Conduct scheduled maintenance inspections
E4	CORE	Conduct support equipment inspections
E5	CORE	Incorporate Technical Directives (TD)
E4	CORE	Maintain Aircraft Mounted Accessory Drive (AMAD) assemblies
E7	CORE	Manage Naval Aviation Maintenance Programs (NAMP)
E6	CORE	Monitor Naval Aviation Maintenance Programs (NAMP)

CORROSION CONTROL

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Conduct corrosion inspections
E4	CORE	Perform corrosion prevention procedures
E4	CORE	Treat power plant and related systems corrosion

MAINTENANCE ADMINISTRATION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E7	CORE	Assign aircraft to missions
E7	CORE	Brief and debrief flight crews
E7	CORE	Conduct maintenance briefs
E4	CORE	Document aircraft maintenance
E7	CORE	Manage cannibalization actions
E6	CORE	Manage power plant administrations
E7	NON-CORE	Prepare Broad Arrow reports
E7	CORE	Release aircraft safe for flight
E7	NON-CORE	Report aircraft status
E4	CORE	Review Aircraft Discrepancy Books (ADB)
E7	CORE	Schedule aircraft for maintenance
E7	CORE	Schedule aircraft inspections

FUEL SYSTEMS MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Collect aircraft fuel samples
E4	CORE	Maintain aircraft fuel systems
E4	NON-CORE	Remove and replace Aerial Refueling Stores (ARS)
E4	CORE	Remove and replace engine fuel system components
E4	CORE	Remove and replace fuel stores
E4	CORE	Repair external fuel tanks
E5	NON-CORE	Troubleshoot Aerial Refueling Stores (ARS)
E5	CORE	Troubleshoot aircraft fuel systems
E5	CORE	Troubleshoot external fuel tanks
E4	CORE	Remove and replace blade fold systems
E5	CORE	Troubleshoot aircraft drive transmission systems
E5	CORE	Troubleshoot aircraft rotor system components

PROPELLER SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Inspect aircraft propellers
E4	CORE	Maintain aircraft propeller systems
E4	CORE	Maintain reduction gearbox systems

E4	CORE	Maintain torque meter assemblies
E4	CORE	Remove and replace valve housing assemblies
E5	CORE	Troubleshoot propeller systems
E5	CORE	Troubleshoot reduction gear box
E5	CORE	Troubleshoot valve housing assemblies

NEBC Job Title**Aviation Machinist's Mate Intermediate Level****NEBC Job Code****001417****Job Family**

Installation, Maintenance, and Repair

NOC

TBD

Short Title (30 Characters)

AVIA MACHINIST MATE I-LEVEL

Short Title (10 Characters)

AVMECH ILV

Pay Plan

Enlisted

Career Field

AD

Other Relationships and Rules

NEC 72XX series, 8300, and 8800

Job Description

Aviation Machinist's Mates Intermediate Level conduct intermediate level repair on aircraft engines; perform complete intermediate level turboshaft, turbofan, turbojet, and turboprop engine repair including propellers, rotors, gearboxes, and drive accessories; and evaluate turbine engines performance using jet test cells and advanced calibration equipment.

DoD Relationship**Group Title**

Aircraft Engines

DoD Code

160100

O*NET Relationship**Occupation Title**

Aircraft Mechanics and Service Technicians

SOC Code

49-3011.00

Job Family

Installation, Maintenance, and Repair

Skills

Equipment Maintenance

Repairing

Quality Control Analysis

Troubleshooting

Systems Analysis

Reading Comprehension

Operation Monitoring

Management of Material Resources

Operation and Control

Writing

Abilities

Selective Attention

Manual Dexterity

Deductive Reasoning

Category Flexibility

Written Comprehension

Control Precision

Oral Expression

Perceptual Speed

Written Expression

Arm-Hand Steadiness

POWER PLANT MAINTENANCE**Paygrade****Task Type****Task Statements**

E4	CORE	Collect oil samples for analysis
E5	CORE	Conduct special engine inspections
E5	CORE	Inspect accessory gearbox assemblies
E5	CORE	Inspect Gas Turbine Compressor (GTC) assemblies
E4	CORE	Maintain accessory gearbox assemblies
E4	CORE	Maintain engine bleed air systems
E4	CORE	Maintain engine control systems
E4	CORE	Maintain engine ignition systems
E4	CORE	Maintain engine modules
E4	CORE	Maintain engine starting systems
E4	CORE	Maintain oil systems (airframe mounted accessory drive, engine, variable exhaust nozzle, gearbox, etc.)
E4	CORE	Maintain Quick Engine Change (QEC) assemblies
E5	CORE	Perform electrical inspections on engine components
E5	CORE	Perform engine throttle rigging operations
E4	CORE	Perform engine wash
E4	CORE	Preserve and de-preserve engines
E4	CORE	Repair Gas Turbine Compressor (GTC) assemblies
E6	CORE	Supervise power plant and related systems maintenance
E5	CORE	Troubleshoot power plants and related systems

ENGINE COMPONENT INSPECTION AND MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Inspect engine fuel system components
E5	CORE	Inspect internal hot and cold sections
E4	CORE	Maintain compressor systems
E4	CORE	Maintain engine drive shafts
E4	CORE	Maintain engine exhaust systems
E4	CORE	Maintain turbine assemblies
E4	CORE	Remove and replace engine anti-ice system components
E4	CORE	Remove and replace engine bleed air system components
E4	CORE	Remove and replace engine exhaust system components
E4	CORE	Remove and replace engine ignition system components
E4	CORE	Remove and replace engine oil system components
E4	CORE	Remove and replace engine starting system components
E4	CORE	Remove and replace turbine assemblies
E4	CORE	Repair combustion systems
E4	CORE	Repair engine compressor assemblies

AUXILIARY POWER

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Inspect Auxiliary Power Units (APU)
E4	CORE	Maintain Auxiliary Power Unit (APU) systems
E4	CORE	Remove and replace Auxiliary Power Units (APU)
E5	CORE	Troubleshoot Auxiliary Power Units (APU)

HELICOPTER MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Inspect aircraft rotor system components
E4	CORE	Maintain aircraft rotor systems
E5	CORE	Perform vibration analysis
E4	CORE	Remove and replace aircraft rotor system components
E5	CORE	Troubleshoot aircraft rotor system components

GENERAL MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Conduct conditional inspections
E6	CORE	Conduct Quality Assurance (QA) inspections
E5	CORE	Conduct scheduled maintenance inspections
E4	CORE	Conduct support equipment inspections
E5	CORE	Incorporate Technical Directives (TD)
E5	CORE	Maintain engine test cell equipment
E5	CORE	Maintain oil analysis equipment
E7	CORE	Manage Naval Aviation Maintenance Programs (NAMP)
E6	CORE	Monitor Naval Aviation Maintenance Programs (NAMP)
E5	CORE	Perform engine test cell operations

CORROSION CONTROL

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Conduct corrosion inspections
E4	CORE	Perform corrosion prevention procedures
E4	CORE	Treat power plant and related systems corrosion

MAINTENANCE ADMINISTRATION

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E7	CORE	Conduct maintenance briefs
E4	CORE	Document aircraft maintenance
E7	CORE	Manage cannibalization actions
E6	CORE	Manage power plant administrations
E7	NON-CORE	Prepare Broad Arrow reports
E7	CORE	Prepare engine status reports

FUEL SYSTEMS MAINTENANCE

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E4	CORE	Remove and replace engine fuel system components
E4	NON-CORE	Repair Aerial Refueling Stores (ARS)
E4	CORE	Repair external fuel tanks
E5	NON-CORE	Troubleshoot Aerial Refueling Stores (ARS)
E5	CORE	Troubleshoot external fuel tanks

PROPELLER SYSTEMS

<u>Paygrade</u>	<u>Task Type</u>	<u>Task Statements</u>
E5	CORE	Inspect aircraft propellers
E4	CORE	Maintain aircraft propeller systems
E4	CORE	Maintain reduction gearbox systems
E4	CORE	Maintain torque meter assemblies
E4	CORE	Remove and replace valve housing assemblies
E4	CORE	Repair aircraft propellers
E5	CORE	Troubleshoot propeller systems
E5	CORE	Troubleshoot valve housing assemblies